FEB 2 3 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Application of : ARIDOR et al.

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Serial No.: 10/634,319 : Group Art Unit: 2163

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Filed : August 1, 2003 : Examiner: Hanh B. Thai

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For : INFORMATION SEARCH USING KNOWLEDGE AGENTS

Honorable Commissioner for Patents P.O. Box 1450
Alexandria, Virginia 22313-1450

DECLARATION UNDER 37 CFR 1.131

Sir:

We, the undersigned, Yariv Aridor, David Carmel, Michael Herscovici, Yoelle Maarek-Smadja, Aya Soffer and Ronny Lempel, hereby declare as follows:

- 1) We are the Applicants in the patent application identified above, and are the inventors of the subject matter described and claimed in claims 35-62 therein.
- 2) Prior to February 25, 2000, we reduced our invention to practice, as described and claimed in the subject application, in Israel, a WTO country. We implemented the invention in the form of software code in the Java programming language, and then tested the code successfully in a prototype system.

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- 3) As evidence of the reduction to practice of the present invention, we attach hereto in Exhibits A-C parts of the Java source code that we used to implement the invention:
 - Exhibit A: Class KnowledgeAgents.Agent
 - Exhibit B: Class KnowledgeAgents.AgentGUI
 - Exhibit C: Class KnowledgeAgents.Repository

A directory listing in Exhibit D (generated by the file archiving system used in the IBM Haifa Research Laboratory) shows the date on which the above source code files were stored on disk. The dates of the files, which are blacked out in Exhibit D, are prior to February 25, 2000. Results of testing this code are reported in a paper we prepared prior to February 25, 2000, entitled, "Knowledge Agents on the Web," which is attached hereto as Exhibit E.

4) Generally speaking, the software code in Exhibits A-C performs the functions of searching a corpus of documents, such as the World Wide Web, using knowledge agents that have developed specializations in certain knowledge domains. The following table shows the correspondence between the elements of method claims 35-48 in the present patent application and elements of the source code in Exhibits A-C:

Claim 35	Source code
A method for searching	KnowledgeAgents.AgentGUI and
a corpus of documents,	KnowledgeAgents.Agent provide a set of
comprising:	APIs to construct a domain specific
	agent and to use it for domain-
	specific search. See, for example,
	Exhibit A, lines 290-305.

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defining a knowledge	The KnowledgeAgents.Agent constructor
domain;	(Exhibit A, lines 184-222) constructs
	a new agent for a given domain. The
	domain is defined by certain Web sites
	held in a repository (Exhibit C) that
	is specific to the agent/domain.
identifying a set of	The user initially specifies a set of
reference documents in	sites (reference documents) using the
the corpus pertinent	"Add Sites" command in
to the domain;	KnowledgeAgents.AgentGUI.actionPerform
	ed() (Exhibit B, lines 445 - 450).
	This code calls the ActionAddSites
	sub-class defined in
	KnowledgeAgents.Agent (Exhibit A,
	lines 144 - 165), which adds the sites
	to the agent repository.
searching the corpus	<pre>KnowledgeAgents.Agent.textQuery()</pre>
using the set of	(Exhibit A, lines 289-399) searches
reference documents to	for a specific query over the agent's
find one or more of	domain and finds sites that satisfy
the documents in the	the query. The Boolean parameter
corpus that contain	update of this method (line 316)
information in the	controls whether the search results
domain relevant to a	will be added/updated into the agent's
first query; and	repository.

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adding at least one of KnowledgeAgents.Agent.rankSites() the found documents to (Exhibit A, lines 539-686) ranks the sites in which search results were the set of reference documents for use in found in the query stage. repository is updated (lines 685-686) searching the corpus for information in the to include the best sites, i.e., sites domain relevant to a with the highest weights. The updated repository is then available for use second, subsequent the next time textQuery() is invoked. query, which is substantially different from the first query. Claim 36 The method according The user inputs query terms as text strings using the "Refine Query" to claim 35, wherein command in KnowledgeAgents.AgentGUI. inputting the first actionPerformed() (Exhibit B, lines query comprises inputting one or more 436-441). search terms.

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Claim 37	
The method according	<pre>KnowledgeAgents.Agent.refineQuery()</pre>
to claim 36, wherein	(Exhibit A, lines 1068-1087) receives
searching the corpus	as input a given query and number of
comprises finding	terms to use in expanding the query.
lexical	This method then expands the query
characteristics of	(i.e., refines the search terms) using
terms in the reference	lexical characteristics (in the form
documents and refining	of lexical affinities - "LAs")
the search terms using	extracted from the agent's repository.
the lexical	
characteristics.	
Claim 38	
Claim 38	<pre>KnowledgeAgents.Agent.linkQuery()</pre>
	<pre>KnowledgeAgents.Agent.linkQuery() (Exhibit A, lines 400-451) receives as</pre>
Claim 38 The method according to claim 35, wherein	
Claim 38 The method according	(Exhibit A, lines 400-451) receives as
Claim 38 The method according to claim 35, wherein inputting the first	(Exhibit A, lines 400-451) receives as input a set of documents (sites) that
Claim 38 The method according to claim 35, wherein inputting the first query comprises	(Exhibit A, lines 400-451) receives as input a set of documents (sites) that the user has specified as representing
Claim 38 The method according to claim 35, wherein inputting the first query comprises specifying one or more	(Exhibit A, lines 400-451) receives as input a set of documents (sites) that the user has specified as representing the information available on the Web.
Claim 38 The method according to claim 35, wherein inputting the first query comprises specifying one or more documents	(Exhibit A, lines 400-451) receives as input a set of documents (sites) that the user has specified as representing the information available on the Web. (The method returns an expanded set of
Claim 38 The method according to claim 35, wherein inputting the first query comprises specifying one or more documents representative of the	(Exhibit A, lines 400-451) receives as input a set of documents (sites) that the user has specified as representing the information available on the Web. (The method returns an expanded set of sites that are optimally relevant to

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Claim 39	
The method according	KnowledgeAgents.Agent.textQuery()
to claim 35, wherein	calls
searching the corpus comprises searching the corpus to find the documents that contain the information relevant to the query and ranking the found	KnowledgeAgents.Agent.rankSites() (Exhibit A, lines 539-687) which ranks the sites returned by the search according to the sites in the agent's repository. The comparison may be based on textual resemblance or on links, as noted with respect to claims
documents by comparing them to the set of reference documents.	40 and 41 below.
Claim 40	
The method according	<pre>KnowledgeAgents.Agent.rankSites()</pre>
to claim 39, wherein	ranks the search results by evaluating
ranking the found	the textual resemblance between
documents comprises	documents. It performs this function
evaluating a textual	by calling (at line 595)
resemblance between	KnowledgeAgents.Agent.
the found documents	normalizeTextWeights() (Exhibit A,
and the reference documents.	lines 1213-1235).

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Claim 41	
The method according	<pre>KnowledgeAgents.Agent.getForwSet()</pre>
to claim 39, wherein	finds all pages that the pages in the
ranking the found	result set link to (Exhibit A, lines
documents comprises	729-868), while
assessing links	KnowledgeAgents.Agent.getBackSet()
between the found	finds all pages that link to the
documents and the	result set (lines 689-728). Both
reference documents.	methods are called by
	KnowledgeAgents.Agent.textQuery() in
	order to find all pages linking to and
	linked by the result page.
Claim 42	
The method according	<pre>In KnowledgeAgents.Agent.rankSites(),</pre>
to claim 39, wherein	after collecting all pages and scoring
adding the at least	them, the top scored documents are
one of the found	used to update the agent's repository
documents comprises	(Exhibit A, lines 684 - 686) by
adding at least the	calling
document having the	KnowledgeAgents.Repository.transfuse()
highest ranking.	(Exhibit C, lines 197-297).

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Claim 43 KnowledgeAgents.Repository.transfuse() The method according "transfuses new good sites into the to claim 35, wherein adding the at least repository, replacing stale sites" (Exhibit C, line 198). one of the found documents comprises removing one of the documents from the set responsive to adding the at least one of the found documents. Claim 44 The method according The class KnowledgeAgents.Repository tracks the relevance level for each of to claim 43, and comprising tracking a the sites in the repository in the SiteDB local object. (This object is level of relevance of the reference declared in Exhibit C, line 17, and the scores are updated at lines 235documents to the queries, and wherein 252.) These relevance levels are used to determine whether old sites will be removing the one of kept or replaced during the update the documents comprises removing one process performed by the of the reference KnowledgeAgents.Repository.transfuse() documents whose method, as described above. tracked level of relevance is low.

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The method according to claim 35, wherein the corpus comprises at least a part of the World Wide Web, and the documents comprise Web pages, and wherein searching the corpus comprises conveying the query to one or more Web search engines.

KnowledgeAgents.Agent.textQuery()
searches the World Wide Web (WWW,
Exhibit A, lines 303-305). This
method calls one or more search
engines (line 315) to perform the
search. In Exhibit E (page 16, last
paragraph) we described the use of the
AltaVista Web search engine in this
manner.

Claim 46

The method according to claim 45, wherein inputting the first query comprises receiving the query from a user of a pervasive device, and wherein searching the corpus comprises searching while the device is disconnected from the Web.

This feature may be implemented using the code in Exhibits A-C, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Bowman et al. (U.S. Patent 6,006,225) would have led a person of ordinary skill in the art to carry out the step of searching while the device that received the search query is disconnected from the Web.

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The method according to claim 35, wherein identifying the set of reference documents comprises opening one or more files of a knowledge base on a computer in which data regarding the reference documents are saved.

This feature may be implemented using the code in Exhibits A-C, by applying the methods in the code to reference documents in a knowledge base on a computer rather than on the World Wide Web, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Liddy et al. (U.S. Patent 6,304,864) would have led a person of ordinary skill in the art to open one or more files of a knowledge base on a computer in the context of identifying the set of reference documents as recited in this claim.

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The method according to claim 47, wherein identifying the set of reference documents comprises identifying the set of documents used by a first user in searching the corpus, and wherein opening the one or more files comprises copying the files for use by a second user in searching the corpus for information in the domain.

This feature may be implemented using the code in Exhibits A-C, by copying files opened by a first user for use by a second user, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Liddy et al. (U.S. Patent 6,304,864) would have led a person of ordinary skill in the art to copy files opened by a first user for use by a second user in searching a corpus for information as recited in this claim.

- 5) Claims 51-57 and 59-61 recite apparatus and a computer software product, with limitations similar to those of certain of method claims 35-48. Based on the similarity of subject matter between the method, apparatus and software claims, it can similarly be demonstrated that we reduced to practice the entire invention recited in claims 51-57 and 59-61 prior to February 25, 2000.
- 6) We described the capabilities of our search software (as presented in Exhibits A-C) in the paper that is attached hereto as Exhibit E. As explained in section 4 of this paper, we defined knowledge agents in a number of different knowledge domains, including palm pilots, cryptography, artificial intelligence, geographic information systems, information

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netrieval and Star Wars. The test results are described in detail on pages 14-18 of Exhibit E. The reported results demonstrate that our software successfully carried out the functions that are recited in the claims above.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and conjecture are thought to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are pubishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

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David Carmel Citizen of Israel 31/b Yaalom Street, Zichron 12/5 Alexander Yanai Street, Haifa 34816 Israel

Date:

Date: Jan 23, 2007

Date:

Declaration under 37 C.F.R 1.131 by Aridor et al.

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- 1) We are the Applicants in the patent application identified above, and are the inventors of the subject matter described and claimed in claims 35-62 therein.
- 2) Prior to February 25, 2000, we reduced our invention to practice, as described and claimed in the subject application, in Israel, a WTO country. We implemented the invention in the form of software code in the Java programming language, and then tested the code successfully in a prototype system.

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- 3) As evidence of the reduction to practice of the present invention, we attach hereto in Exhibits A-C parts of the Java source code that we used to implement the invention:
 - Exhibit A: Class KnowledgeAgents.Agent
 - Exhibit B: Class KnowledgeAgents.AgentGUI
 - Exhibit C: Class KnowledgeAgents.Repository

A directory listing in Exhibit D (generated by the file archiving system used in the IBM Haifa Research Laboratory) shows the date on which the above source code files were stored on disk. The dates of the files, which are blacked out in Exhibit D, are prior to February 25, 2000. Results of testing this code are reported in a paper we prepared prior to February 25, 2000, entitled, "Knowledge Agents on the Web," which is attached hereto as Exhibit E.

4) Generally speaking, the software code in Exhibits A-C performs the functions of searching a corpus of documents, such as the World Wide Web, using knowledge agents that have developed specializations in certain knowledge domains. The following table shows the correspondence between the elements of method claims 35-48 in the present patent application and elements of the source code in Exhibits A-C:

Claim 35	Source code
A method for searching	KnowledgeAgents.AgentGUI and
a corpus of documents,	KnowledgeAgents.Agent provide a set of
comprising:	APIs to construct a domain specific
	agent and to use it for domain-
	specific search. See, for example,
	Exhibit A, lines 290-305.

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defining a knowledge	The KnowledgeAgents.Agent constructor
domain;	(Exhibit A, lines 184-222) constructs
	a new agent for a given domain. The
	domain is defined by certain Web sites
	held in a repository (Exhibit C) that
	is specific to the agent/domain.
identifying a set of	The user initially specifies a set of
reference documents in	sites (reference documents) using the
the corpus pertinent	"Add Sites" command in
to the domain;	KnowledgeAgents.AgentGUI.actionPerform
	ed() (Exhibit B, lines 445 - 450).
	This code calls the ActionAddSites
	sub-class defined in
	KnowledgeAgents.Agent (Exhibit A,
	lines 144 - 165), which adds the sites
	to the agent repository.
searching the corpus	<pre>KnowledgeAgents.Agent.textQuery()</pre>
using the set of	(Exhibit A, lines 289-399) searches
reference documents to	for a specific query over the agent's
find one or more of	domain and finds sites that satisfy
the documents in the	the query. The Boolean parameter
corpus that contain	update of this method (line 316)
information in the	controls whether the search results
domain relevant to a	will be added/updated into the agent's
first query; and	repository.

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KnowledgeAgents.Agent.rankSites() adding at least one of the found documents to (Exhibit A, lines 539-686) ranks the sites in which search results were the set of reference documents for use in found in the query stage. repository is updated (lines 685-686) searching the corpus to include the best sites, i.e., sites for information in the with the highest weights. The updated domain relevant to a second, subsequent repository is then available for use query, which is the next time textQuery() is invoked. substantially different from the first query. Claim 36 The user inputs query terms as text The method according strings using the "Refine Query" to claim 35, wherein inputting the first command in KnowledgeAgents.AgentGUI. actionPerformed() (Exhibit B, lines query comprises 436-441). inputting one or more search terms.

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Claim 37 The method according KnowledgeAgents.Agent.refineQuery() to claim 36, wherein (Exhibit A, lines 1068-1087) receives as input a given query and number of searching the corpus comprises finding terms to use in expanding the query. This method then expands the query lexical characteristics of (i.e., refines the search terms) using terms in the reference lexical characteristics (in the form documents and refining of lexical affinities - "LAs") the search terms using extracted from the agent's repository. the lexical characteristics. Claim 38 KnowledgeAgents.Agent.linkQuery() The method according (Exhibit A, lines 400-451) receives as to claim 35, wherein input a set of documents (sites) that inputting the first the user has specified as representing query comprises the information available on the Web. specifying one or more (The method returns an expanded set of documents sites that are optimally relevant to representative of the the given sites.) information to be

found in the corpus.

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Claim 39	
The method according	<pre>KnowledgeAgents.Agent.textQuery()</pre>
to claim 35, wherein	calls
searching the corpus	<pre>KnowledgeAgents.Agent.rankSites()</pre>
comprises searching	(Exhibit A, lines 539-687) which ranks
the corpus to find the	the sites returned by the search
documents that contain	according to the sites in the agent's
the information	repository. The comparison may be
relevant to the query	based on textual resemblance or on
and ranking the found	links, as noted with respect to claims
documents by comparing	40 and 41 below.
them to the set of	
reference documents.	
Claim 40	
The method according	KnowledgeAgents.Agent.rankSites()
to claim 39, wherein	ranks the search results by evaluating
ranking the found	the textual resemblance between
documents comprises	documents. It performs this function
evaluating a textual	by calling (at line 595)
resemblance between	KnowledgeAgents.Agent.
the found documents	normalizeTextWeights() (Exhibit A,
and the reference	lines 1213-1235).
documents.	

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Claim 41	
The method according	KnowledgeAgents.Agent.getForwSet()
to claim 39, wherein	finds all pages that the pages in the
ranking the found	result set link to (Exhibit A, lines
documents comprises	729-868), while
assessing links	KnowledgeAgents.Agent.getBackSet()
between the found	finds all pages that link to the
documents and the	result set (lines 689-728). Both
reference documents.	methods are called by
	KnowledgeAgents.Agent.textQuery() in
	order to find all pages linking to and
	linked by the result page.
Claim 42	
The method according	<pre>In KnowledgeAgents.Agent.rankSites(),</pre>
to claim 39, wherein	after collecting all pages and scoring
adding the at least	them, the top scored documents are
one of the found	used to update the agent's repository
documents comprises	(Exhibit A, lines 684 - 686) by
adding at least the	calling
document having the	KnowledgeAgents.Repository.transfuse()
highest ranking.	(Exhibit C, lines 197-297).

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Claim 43	
The method according	KnowledgeAgents.Repository.transfuse()
to claim 35, wherein	"transfuses new good sites into the
adding the at least	repository, replacing stale sites"
one of the found	(Exhibit C, line 198).
documents comprises	
removing one of the	
documents from the set	
responsive to adding	
the at least one of	
the found documents.	
Claim 44	
The method according	The class KnowledgeAgents.Repository
to claim 43, and	tracks the relevance level for each of
comprising tracking a	the sites in the repository in the
level of relevance of	SiteDB local object. (This object is
the reference	declared in Exhibit C, line 17, and
documents to the	the scores are updated at lines 235-
queries, and wherein	252.) These relevance levels are used
removing the one of	to determine whether old sites will be
the documents	kept or replaced during the update
comprises removing one	process performed by the
of the reference	KnowledgeAgents.Repository.transfuse()
documents whose	method, as described above.
tracked level of	
relevance is low.	

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Claim 45 KnowledgeAgents.Agent.textQuery() The method according searches the World Wide Web (WWW, to claim 35, wherein Exhibit A, lines 303-305). This the corpus comprises method calls one or more search at least a part of the engines (line 315) to perform the World Wide Web, and search. In Exhibit E (page 16, last the documents comprise paragraph) we described the use of the Web pages, and wherein AltaVista Web search engine in this searching the corpus manner. comprises conveying the guery to one or more Web search engines. Claim 46 This feature may be implemented using The method according the code in Exhibits A-C, but it is to claim 45, wherein not explicitly shown in the exhibits. inputting the first In regard to this claim, the Examiner query comprises indicated that Bowman et al. (U.S. receiving the query Patent 6,006,225) would have led a from a user of a person of ordinary skill in the art to pervasive device, and carry out the step of searching while wherein searching the the device that received the search corpus comprises query is disconnected from the Web. searching while the device is disconnected from the Web.

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Claim 47 This feature may be implemented using The method according to claim 35, wherein the code in Exhibits A-C, by applying the methods in the code to reference identifying the set of reference documents documents in a knowledge base on a computer rather than on the World Wide comprises opening one Web, but it is not explicitly shown in or more files of a the exhibits. In regard to this knowledge base on a claim, the Examiner indicated that computer in which data regarding the Liddy et al. (U.S. Patent 6,304,864) reference documents would have led a person of ordinary are saved. skill in the art to open one or more files of a knowledge base on a computer in the context of identifying the set of reference documents as recited in this claim.

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The method according to claim 47, wherein identifying the set of reference documents comprises identifying the set of documents used by a first user in searching the corpus, and wherein opening the one or more files comprises copying the files for use by a second user in searching the corpus for information in the domain.

This feature may be implemented using the code in Exhibits A-C, by copying files opened by a first user for use by a second user, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Liddy et al. (U.S. Patent 6,304,864) would have led a person of ordinary skill in the art to copy files opened by a first user for use by a second user in searching a corpus for information as recited in this claim.

- 5) Claims 51-57 and 59-61 recite apparatus and a computer software product, with limitations similar to those of certain of method claims 35-48. Based on the similarity of subject matter between the method, apparatus and software claims, it can similarly be demonstrated that we reduced to practice the entire invention recited in claims 51-57 and 59-61 prior to February 25, 2000.
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Yariv Aridor Citizen of Israel Yaakov 30900 Israel

Date:

David Carmel Citizen of Israel 31/b Yaalom Street, Zichron 12/5 Alexander Yanai Street, Haifa 34816 Israel

Jan 4024 23 2007

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Israei.		
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Date: 22 Jan 200	Fig. 1. State of the second	
1/200		
Aya Soffer	Ronny Lempel	
Citizen of Israel	Citizen of Israel	
33 Disraeli Street,		Haifa
34333	34987	
Israel		:
Date:	Date:	÷ :.

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reference documents in	sites (reference documents) using the	
the corpus pertinent	"Add Sites" command in	
to the domain;	KnowledgeAgents.AgentGUI.actionPerform	
	ed() (Exhibit B, lines 445 - 450).	
	This code calls the ActionAddSites	
	sub-class defined in	
	KnowledgeAgents.Agent (Exhibit A,	
	lines 144 - 165), which adds the sites	
	to the agent repository.	
searching the corpus	<pre>KnowledgeAgents.Agent.textQuery()</pre>	
using the set of	(Exhibit A, lines 289-399) searches	
reference documents to	for a specific query over the agent's	
find one or more of	domain and finds sites that satisfy	
the documents in the	the query. The Boolean parameter	
corpus that contain	update of this method (line 316)	
information in the	controls whether the search results	
domain relevant to a	will be added/updated into the agent's	
first query; and	repository.	

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KnowledgeAgents.Agent.rankSites() adding at least one of (Exhibit A, lines 539-686) ranks the the found documents to sites in which search results were the set of reference documents for use in found in the query stage. searching the corpus repository is updated (lines 685-686) to include the best sites, i.e., sites for information in the with the highest weights. The updated domain relevant to a repository is then available for use second, subsequent query, which is the next time textQuery() is invoked. substantially different from the first query. Claim 36 The user inputs query terms as text The method according strings using the "Refine Query" to claim 35, wherein inputting the first command in KnowledgeAgents.AgentGUI. query comprises actionPerformed() (Exhibit B, lines inputting one or more 436-441). search terms.

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Claim 37	
The method according	<pre>KnowledgeAgents.Agent.refineQuery()</pre>
to claim 36, wherein	(Exhibit A, lines 1068-1087) receives
searching the corpus	as input a given query and number of
comprises finding	terms to use in expanding the query.
lexical	This method then expands the query
characteristics of	(i.e., refines the search terms) using
terms in the reference	lexical characteristics (in the form
documents and refining	of lexical affinities - "LAs")
the search terms using	extracted from the agent's repository.
the lexical	
characteristics.	
Claim 38	
The method according	<pre>KnowledgeAgents.Agent.linkQuery()</pre>
to claim 35, wherein	(Exhibit A, lines 400-451) receives as
inputting the first	input a set of documents (sites) that
query comprises	the user has specified as representing
specifying one or more	the information available on the Web.
documents	(The method returns an expanded set of
representative of the	sites that are optimally relevant to
information to be	the given sites.)
found in the corpus.	

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Claim 39	
The method according to claim 35, wherein searching the corpus comprises searching the corpus to find the documents that contain the information relevant to the query and ranking the found documents by comparing them to the set of reference documents.	KnowledgeAgents.Agent.textQuery() calls KnowledgeAgents.Agent.rankSites() (Exhibit A, lines 539-687) which ranks the sites returned by the search according to the sites in the agent's repository. The comparison may be based on textual resemblance or on links, as noted with respect to claims 40 and 41 below.
Claim 40	
The method according	KnowledgeAgents.Agent.rankSites()
to claim 39, wherein ranking the found	ranks the search results by evaluating the textual resemblance between
documents comprises	documents. It performs this function
evaluating a textual resemblance between	by calling (at line 595) KnowledgeAgents.Agent.
the found documents and the reference	normalizeTextWeights() (Exhibit A, lines 1213-1235).
documents.	

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Claim 41	
The method according	KnowledgeAgents.Agent.getForwSet()
to claim 39, wherein	finds all pages that the pages in the
ranking the found	result set link to (Exhibit A, lines
documents comprises	729-868), while
assessing links	KnowledgeAgents.Agent.getBackSet()
between the found	finds all pages that link to the
documents and the	result set (lines 689-728). Both
reference documents.	methods are called by
	<pre>KnowledgeAgents.Agent.textQuery() in</pre>
	order to find all pages linking to and
	linked by the result page.
Claim 42	
The method according	In KnowledgeAgents.Agent.rankSites(),
to claim 39, wherein	after collecting all pages and scoring
adding the at least	them, the top scored documents are
one of the found	used to update the agent's repository
documents comprises	(Exhibit A, lines 684 - 686) by
adding at least the	calling
document having the	KnowledgeAgents.Repository.transfuse()
highest ranking.	(Exhibit C, lines 197-297).

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Claim 43	
The method according	KnowledgeAgents.Repository.transfuse()
to claim 35, wherein	"transfuses new good sites into the
adding the at least	repository, replacing stale sites"
one of the found	(Exhibit C, line 198).
documents comprises	
removing one of the	
documents from the set	·
responsive to adding	
the at least one of	
the found documents.	
Claim 44	
The method according	The class KnowledgeAgents.Repository
to claim 43, and	tracks the relevance level for each of
comprising tracking a	the sites in the repository in the
level of relevance of	SiteDB local object. (This object is
the reference	declared in Exhibit C, line 17, and
documents to the	the scores are updated at lines 235-
queries, and wherein	252.) These relevance levels are used
removing the one of	to determine whether old sites will be
the documents	kept or replaced during the update
comprises removing one	process performed by the
of the reference	KnowledgeAgents.Repository.transfuse()
documents whose	method, as described above.
tracked level of	
relevance is low.	

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The method according to claim 35, wherein the corpus comprises at least a part of the World Wide Web, and the documents comprise Web pages, and wherein searching the corpus comprises conveying the query to one or more Web search engines.

KnowledgeAgents.Agent.textQuery()
searches the World Wide Web (WWW,
Exhibit A, lines 303-305). This
method calls one or more search
engines (line 315) to perform the
search. In Exhibit E (page 16, last
paragraph) we described the use of the
AltaVista Web search engine in this
manner.

Claim 46

The method according to claim 45, wherein inputting the first query comprises receiving the query from a user of a pervasive device, and wherein searching the corpus comprises searching while the device is disconnected from the Web.

This feature may be implemented using the code in Exhibits A-C, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Bowman et al. (U.S. Patent 6,006,225) would have led a person of ordinary skill in the art to carry out the step of searching while the device that received the search query is disconnected from the Web.

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Claim 47 This feature may be implemented using The method according the code in Exhibits A-C, by applying to claim 35, wherein the methods in the code to reference identifying the set of documents in a knowledge base on a reference documents comprises opening one computer rather than on the World Wide Web, but it is not explicitly shown in or more files of a the exhibits. In regard to this knowledge base on a claim, the Examiner indicated that computer in which data Liddy et al. (U.S. Patent 6,304,864) regarding the would have led a person of ordinary reference documents skill in the art to open one or more are saved. files of a knowledge base on a computer in the context of identifying the set of reference documents as recited in this claim.

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The method according to claim 47, wherein identifying the set of reference documents comprises identifying the set of documents used by a first user in searching the corpus, and wherein opening the one or more files comprises copying the files for use by a second user in searching the corpus for information in the domain.

This feature may be implemented using the code in Exhibits A-C, by copying files opened by a first user for use by a second user, but it is not explicitly shown in the exhibits. In regard to this claim, the Examiner indicated that Liddy et al. (U.S. Patent 6,304,864) would have led a person of ordinary skill in the art to copy files opened by a first user for use by a second user in searching a corpus for information as recited in this claim.

- 5) Claims 51-57 and 59-61 recite apparatus and a computer software product, with limitations similar to those of certain of method claims 35-48. Based on the similarity of subject matter between the method, apparatus and software claims, it can similarly be demonstrated that we reduced to practice the entire invention recited in claims 51-57 and 59-61 prior to February 25, 2000.
- 6) We described the capabilities of our search software (as presented in Exhibits A-C) in the paper that is attached hereto as Exhibit E. As explained in section 4 of this paper, we defined knowledge agents in a number of different knowledge domains, including palm pilots, cryptography, artificial intelligence, geographic information systems, information

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retrieval and Star Wars. The test results are described in detail on pages 14-18 of Exhibit E. The reported results demonstrate that our software successfully carried out the functions that are recited in the claims above.

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and conjecture are thought to be true; and further that these statements were made with the knowledge that willful talse statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

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